



Designation: C1091 – 03a(Reapproved 2008)

# Standard Test Method for Hydrostatic Infiltration Testing of Vitrified Clay Pipe Lines<sup>1</sup>

This standard is issued under the fixed designation C1091; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

## 1. Scope

1.1 This test method defines procedures for hydrostatic infiltration testing of new installations of vitrified clay pipe lines, to demonstrate the structural integrity of the installed line. Refer to Practice C12.

1.2 This test method is suitable for testing gravity-flow pipe lines constructed of vitrified clay pipe or combinations of clay pipe and other pipe materials.

1.3 This test method is applicable to the testing of the pipe lines only. Manholes or other structures should be tested separately.

1.4 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

1.5 *This standard does not purport to address all of the safety problems, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

## 2. Referenced Documents

2.1 *ASTM Standards:*<sup>2</sup>

C12 Practice for Installing Vitrified Clay Pipe Lines

C828 Test Method for Low-Pressure Air Test of Vitrified Clay Pipe Lines

C896 Terminology Relating to Clay Products

## 3. Terminology

3.1 Terminology C896 can be used for clarifications of terminology in this test method.

<sup>1</sup> This test method is under the jurisdiction of ASTM Committee C04 on Vitrified Clay Pipe and is the direct responsibility of Subcommittee C04.20 on Methods of Test and Specifications.

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<sup>2</sup> For referenced ASTM standards, visit the ASTM website, [www.astm.org](http://www.astm.org), or contact ASTM Customer Service at [service@astm.org](mailto:service@astm.org). For Annual Book of ASTM Standards volume information, refer to the standard's Document Summary page on the ASTM website.

## 4. Summary of Test Method

4.1 This test method shall be performed on lines after connection laterals, if any, have been plugged and adequately braced to withstand the test pressure, and after the trenches have been backfilled and compacted.

## 5. Significance and Use

5.1 The tests called for herein, for their results, indicate the acceptability of installed vitrified clay pipelines.

## 6. Preparation of the Line

6.1 To ensure the proper seating of the test plugs and the accuracy of the test, the lines should be cleaned prior to testing.

6.2 Examples of methods for cleaning the lines are the sewer cleaning ball and high pressure flushing equipment.

## 7. Procedure

7.1 The hydrostatic infiltration test procedure is applicable where the measured water table is 2 ft (610 mm) or greater above the pipe barrel at the lower manhole of the test section. Where the ground water elevation is indeterminate, less than 2 ft (610 mm) above the top of the pipe barrel, or the line is partially below the water table, use a combination of both the air test and infiltration procedure.

NOTE 1—The most practical method for testing is Test Method C828, and is recommended. However, where ground water is present and meets the criteria established in 7.1, the infiltration test procedure outlined in this practice is recommended.

7.2 Determine the allowable infiltration rate for the test section using Table 1.

NOTE 2—What can be called false infiltration represents condensate on the pipe walls.

7.3 The test rate table is based on the standard of 50 gal/in. diameter-mile-day (4.6 L/mm diameter-kilometre-day).

7.4 Table 1 shows the allowable infiltration rate in gallons · 100 ft of pipe · hour (litres per 30.5 metres · hour) for each nominal pipe size.

7.5 If the test section includes more than one pipe size, calculate the allowable test rate for each size and add to arrive at the total allowable test rate for the test section.

7.6 Discontinue all pumping of ground water for a period of 24 h prior to testing.